Precipitation Sensor Replacement

Tools Included:

- Key
- Spacer for step 3
- Small screw driver
- Electrical tape
- Level
- Clippers
- Razor Knife
- Cell phone
    - Important phone numbers
        - Brent French - 865/607-1359
        - Michael Black – 865/607-1621
        - Mark Hall – 865/607-1737

Precipitation Sensor Replacement

1. Open the door to the Control Box (need key). This indicates a site visit.

2. Slowly release latches on the Precipitation Gauge Cover and pin in the up position.

3. Add a spacer to hold the cover up.

4. Locate the heater cabling and unplug.


The bulge helps locate the cabling.


5. Remove the cover noting the general position for replacement.

6. Carefully lift the bucket up and out. The strain gauges are very sensitive to shock.

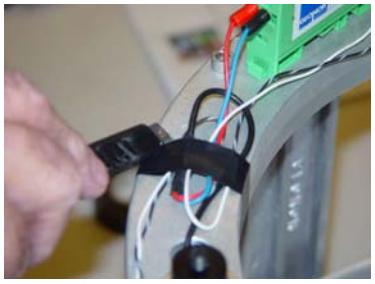
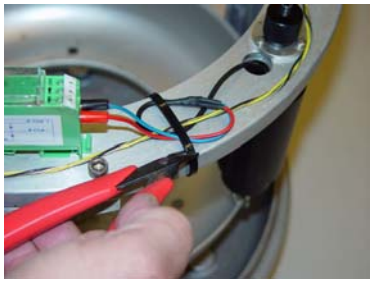
7. Empty the contents into the plastic jug. The waste antifreeze should be disposed of properly or held on to and NOAA will collect during the next site visit.

8. Looking at the serial number will identify the broken sensor. The sensor you are replacing is serial number _____

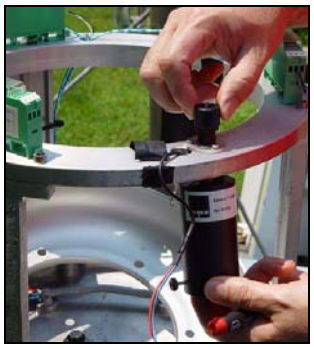
   Serial number found here on sensor

   (The serial number will be provided by ATDD personnel when there is a problem)

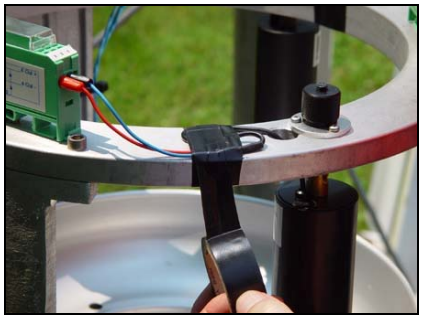
9. Remove the bad sensor hook-up wires (red and blue) by unscrewing the wire clamping screws on the terminal block. Cut any tape or zip ties that are restraining the loosened wires

10. Then unscrew knurled black knob on top of sensor.



11. Replace with supplied sensor and rewire. Connect red to #5 and blue to #3 (the numbers are on the green terminal block, seen the left picture below). Tape the sensor wires to the housing to eliminate slack.

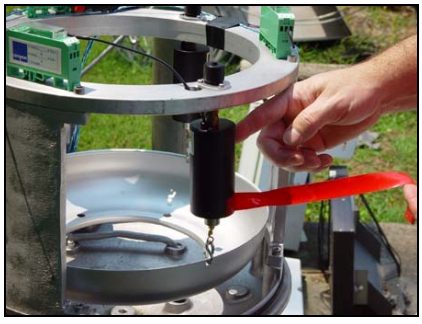
12. Hook bucket carriage to sensor and replace the empty bucket. ***Be sure that nothing is touching the bucket.***

13. Align the black dot on the bucket to the black dot at the mount on one of the sensors.

14. Level the bucket with the supplied level by adjusting the knurled knob.

15. Pour the hydraulic oil into the bucket.

16. Remove tape over setscrew on installed sensor. Loosen the screw on the side of the sensor to release the strain gauge wire.



17. **Check to make sure there is nothing touching the bucket or bucket cradle.** Any wires or cable ties that come in contact should be taped down or relocated. The bucket must hang free from the three sensors in order to make accurate measurements.

18. Inside the Control Box is the 23x datalogger. On the face of the datalogger is a key pad and display screen. Check the datalogger to confirm the sensor is working by keying ***6 88 A** on the datalogger keypad.

    The display will read: trueHz1 ####.#
    trueHz2 ####.#

    Push key **A** again to see trueHz3 ####.#

    All should read between 1000 and 3000 if working, if you push key **B** you will go back and be able to see trueHz1 again. Record these numbers for confirmation in step 20.

    trueHz1 _____

    trueHz2 _____

    trueHz3 _____

19. Replace the cover and reconnect the heater plug. Please be sure to avoid letting the heater plug touch the bucket cradle.

20. Again, check the datalogger to confirm the sensor is working by keying ***6 88 A** on the datalogger keypad. The display will read: trueHz1 ####.#
    trueHz2 ####.#

    Push key **A** again to see trueHz3 ####.#

    All trueHz values should read very close to the same as recorded in step 18 if not, a wire is probably touching the bucket or bucket cradle due to replacing the heater plug and cover. If this is the case, remove the cover, make any necessary adjustments to insure nothing is touching the bucket or bucket cradle and replace the cover. Once again confirm the numbers from step 18.

21. ***Key * 0 when finished. It is IMPERATIVE that '* 0' is keyed***. Close the Control Box and lock.